MUSIC VIDEO KIT™

Instruction Manual

SIGHT & SOUND
Music Software, Inc.

MUSIC VIDEO KIT

By M. Peter Engelbrite
Documentation Compiled, Written, and Edited by
Patrick Kusina, Connie Kash, and M. Peter Engelbrite
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CONTENTS

To Load Music Video Kit 3
Trying Music Video Kit Right Away 4
Playing Preprogrammed Videos
Create a Simple Video
The Music Video Kit and Compatible Programs 6
The Music Processor
Computer Song Albums
Performance Note 6
Introduction to Music Video Kit 8
Two Main Parts:
The Performer Mode 9
Graphics Editor 23
Using the Menus 8
The Performer Mode 9
MENUS AND SUBMENUS
1—Play Videos (P) 9
1—Play All Videos (A) 9
2—Load & Play Video (L) 9
3—Play it Again (P) 9
2—Create Videos (C) 10
Formatting a Work Disk 10
Using the Features of the Create Video Mode 11
1—Create New Video (C) 11
2—Record Performances (R) 12
Some Things to Know About Performances 12
3—Add to Performances (A) 14
4—Delete Performances (D) 16
5—Load Video (L) 16
6—Save Video (S) 16
7—Play Video (P) 16
Staging Hints 17
3—Utilities (U) 18
1—Full Directory (D) 18
2—Disk Command (C) 18
3—Edit Video & Music Text (T) 18
4—Load Music (L) 19
5—Save Music (S) 19
Using Computer Song Albums or Music Processor Songs 20

Another Method to Shorten
Computer Song Album Songs 21
Saving Your Shortened Songs 21
A Note About Memory Overflow 22
4—Graphics Editor 22, 23
Graphics Editor Main Menu 24
1—Edit Actor (A) 24
1—Load Actor (L) 24
2—Save Actor (S) 24
3—Draw Actor (A) 25
Something To Try 26
Creating an Actor 27
To View Your Drawings 31
4—Create Actor Animation (C) 31
Making Your Actor Move 32
Try Out Your Actor 32
To Save Your Actor 33
5—Animate Actor (*) 33
6—Delete Actor (D) 33
7—Edit Actor Text (T) 34
Here's Something You Can Try 35
2—Edit Backgrounds (B) 43
1—Load Backgrounds (L) 43
2—Save Backgrounds (S) 43
3—Draw Background (B) 43
Making a Simple Background 43
Props 48
Viewing Your Actor and Background 48
Advanced Background Color Modes 49
Extended Mode 49
Multicolor Mode 49
4—Delete All Backgrounds (D) 43
5—Edit Background Text (T) 43
3—Utilities 50
1—Full Directory (D) 50
2—Disk Command (C) 50
3—Load Koala File (K) 50
4—Performer 50
The Multi-Color Mode in the Actor Editor 36
Double Actor Shapes 40
Music Video Kit Advanced Documentation
The Graphics Language 51
Variables 52
More About Variables 55
Arithmetic 56
Functions 58
Special Considerations 63

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Backgrounds 64
By the Numbers 65
Zing: An Example 66
Making Changes 70
Changing the Sprites 72
VIC Chip Registers 73
Connecting to Your Stereo 76
Warranty 78
Music Video Kit Graphics Editor Menus
Actors Menu 79
Draw Actor Mode 82
Background Menu 80
Draw Background Mode 86
Utilities Menu 81
Draw Character Mode 84
Record Mode Freeze Commands 88
Index 89

TO LOAD MUSIC VIDEO KIT

1. This program requires a Commodore compatible joystick. Plug it into Port #2—the one toward the rear.

2. After turning on your computer, disk drive, and monitor (be sure the volume is up), insert the System disk (Disk A), type LOAD"*",8 and press RETURN. When READY appears type RUN and press RETURN.

3. When loading is finished a main menu appears.

Note: To get started, leave the program disk in the drive. Periodically, Music Video Kit will go looking for various files on the disk. Should files from the Data disk (Disk B) be required, you'll be instructed when to insert it in the drive.

Helpful Hint: Should you at anytime forget to put a disk in the drive and the program is looking for one you may see a blank screen with a flashing cursor. Press RUN/STOP and RESTORE to return to Main Menu.

NOTE: Once you become familiar with all the features of Music Video Kit, you may want to go right to the Graphics Editor and start creating actors and backgrounds. In this case, type LOAD "MVK2",8 and press RETURN. When loading is finished, type RUN and press RETURN.

TRYING MUSIC VIDEO KIT RIGHT AWAY

The first thing you'll want to do with your new Music Video Kit is to try it out, right away! To see the unique videos you can create using actors, backgrounds, and music, you can view the preprogrammed videos included on Music Video Kit System disk (DISK A). See page 9—**The Performer Mode.**

Or, to create a simple video, follow these steps:

a. Insert Data disk (DISK B) in drive. **NOTE: DISK B has two sides. You may have to flip it over to find the backgrounds, actors, and music described below. After reinserting, press Space Bar to view a listing of files contained on that side.**

b. From the Performer Main menu, press C.

c. From the second menu, press C again to select Create New Video. A list of the backgrounds available is displayed on the screen. Select SKATING RINK.

d. After the background is loaded, a list of available actors is displayed on the screen. For Actor #1, select BOY SKATER; Actor #2, select GIRL SKATER; Actor #3, select RABBIT SKATER; and Actor #4, select PENGUIN SKATER. You'll be prompted to select Actor #5 (you can choose up to 7 actors), however, for this video, you'll use only 4. Press RETURN.

e. After list of songs is displayed, select MINUET IN G by pressing the indicated letter.

Now that you've selected the three components that make up a video—background, actor(s), and music, you're ready to put it all together and record a complete video.

f. When recording a video, each actor's PERFORMANCE is recorded separately. Press R to select the Record Performance mode. You're now ready to record. Press 1 to select Performance #1. The SKATING RINK background appears with Actor #1 BOY SKATER 'frozen' (no pun intended—he's not moving) in the middle of the screen.

At this point, you can make adjustments to the actor: Press the f7 key 5 times—this will set the actor's face, hands, and skate blades to an off-white color. f7 and f8 are used to adjust one of the colors in a multicolor actor; f5 and f6 are used to adjust the other color in a multicolor actor. f1 and f2 are used to select the color of the skater's cap and sweater. Pick your favorite colors.

Use the cursor keys to move the actor to a suitable starting position. (You can even move the actor off the edge of the screen and have him come skating into the rink when the action starts!)

When you have your actor positioned, press the joystick firebutton to leave the 'freeze' mode and move the joystick to start him skating. (Freeze mode can be re-entered at any time by pressing the firebutton again.)

After finishing Performance #1 (the length of a performance is determined by the amount of time it takes to play the entire song), press the R key, then the 2 key to get set to record Performance #2. This time, press the 2 key to recall Actor #2. Set the color of the GIRL SKATER's hat and skirt with the f1 and f2 keys. Position her with the cursor keys and press the firebutton to start recording.

Record Performance #3 and #4 as you did Performance #1 and #2. (Yellow is a good color for the PENGUIN SKATER's beak and the RABBIT SKATER looks good in a purple scarf.)

g. When you're finished recording all four performances, you'll be returned to the menu. Select 7 to replay the video you just created.

THE MUSIC VIDEO KIT AND COMPATIBLE PROGRAMS

Music Video Kit is a complete video and music editing program which is uniquely compatible with several other programs available from Sight & Sound Music Software, Inc. For example , you can use the easy joystick music editing feature of The Music Processor program and all of its unique editing commands, to quickly create fantastic music scores for Music Video Kit. Or, you can use any of the preprogrammed stage and pop hits contained on the various Computer Song Albums. If you presently own these programs and have been working with them, use Music Video Kit to transform your compositions into exciting music video performances.

PERFORMANCE NOTE

As with any new program you probably can't wait to try out all the features of your Music Video Kit. Because Music Video Kit is packed with so many neat features, you might decide to try only one or two at a sitting. Or, you might decide to sit until you've tried all the commands and features, regardless of time. No matter which way you go, be sure to refer to the Index and this manual often.

Music Video Kit is "menu driven", that is, each mode has an on-screen set of choices you can use to decide what you want Music Video Kit to do. To sample some of the features of this program, there are basically two ways to proceed:

Method 1. Quick and Experimental.

Starting with the very first menu, you may want to weave your way in and out through the menus and "wing it" on your own. You'll probably find places to experiment along the way, and if you should need some assistance, check the Index at the rear of the manual.

Method 2. Follow Along.

In the next few pages, follow the steps indicated. You'll find step-by-step hints to help you touch lightly on some of the Music Video Kit features. If at some point you feel ready to delve deeper into any area, check the detailed command lists or the Index for the help you need.

Note: In Music Video Kit, you can usually exit any mode and return to the main menu with one or two presses of the RETURN key.

INTRODUCTION TO MUSIC VIDEO KIT

The Music Video Kit program has two main parts:

1. The Performer. In this mode, you'll put together most of your performances. You'll pick actors, backgrounds or sets, and musical scores. For your convenience, the Data disk (DISK B) included with this program contains many of these already preprogrammed. Once you've picked the backgrounds and music, use your joystick to put the actor's talents to work, all in time with the music. You can even edit the music to fit the exact mood or timing you require.

2. The Graphics Editor. In this mode, you'll create your own actors, costumes, backgrounds, and give the actors the talents they require to do their job.

USING THE MENUS

To use any of the functions in a menu, simply press the number indicated or the letter shown in parentheses.

For your convenience, all of the features of the Graphics Editor Menus are described starting on page 79.

THE PERFORMER MODE

1—Play Videos (P)

Choose this mode and a new menu is displayed. For demonstration purposes, several performances have been preprogrammed and are included on the Music Video Kit System disk (DISK A). You have two methods of viewing these.

If you choose

1—Play All Videos (A), each video performance automatically loads and plays one after another. To exit this mode, press the RETURN key during a performance. This returns you to the main menu. If while a video is playing you'd like to stop and go to the next, press the Space Bar.

2—Load & Play Video (L), when a list of available performances appears, choose one, and press the indicated letter. The performance loads from disk and automatically begins to play. When the performance is finished, you're returned to the main menu. To exit during a performance, press RETURN.

3—Play it Again (P), you can re-play the performance presently stored in memory.

While a video is playing in any of the above modes, you can press the R key to have that video repeat continuously until you press the Space Bar or RETURN.

2—Create Videos (C)

In this mode, Music Video Kit really comes to life. Here is where you bring together actors, backgrounds, and music to create your performances. Music Video Kit contains many commands and functions to help you create interesting videos. These are discussed in other parts of this manual. For now, however, here's how to sample just a few of the steps you'll use along the way.

If you intend to save any of your performances, you'll need to store them on a work disk.

Note: **NEVER TRY TO STORE FILES ON EITHER OF THE MUSIC VIDEO KIT PROGRAM DISKS. ALWAYS USE A FORMATTED WORK DISK.**

FORMATTING A WORK DISK

Music Video kit contains several built-in disk commands. For formatting:

1. From the Performer main menu, press the 3 key for **Utilities.**
2. Press 2 for Disk Command.
3. Remove program disk.
4. Insert a blank disk.
5. Type NØ:WORK DISK,WD
6. Press RETURN. Formatting takes approximately 1½ minutes and erases any previous information on the disk.

When formatting is finished, remove your work disk and insert the Data disk (DISK B).

USING THE FEATURES OF THE CREATE VIDEO MODE

Press 2-Create Video (C) from the main menu. This displays a new menu. Note: Insert the Music Video Kit Data disk (DISK B) in the drive.

Follow the steps below to create a sample music video. Once you're familiar with the basic Music Video Kit functions you can feel free to experiment on your own.

1—Create New Video (C) This mode erases any video data previously in memory. This allows you to choose new backgrounds, actors, and music to build a new video performance.

a. The first thing Music Video Kit asks you is to choose a background. For this example choose the one called ROCK STAGE and press the indicated letter. This loads the chosen background.

b. Next, you're asked to choose the actors you'll use. You can choose from one to seven actors. Starting with Actor #1, choose FEMALE SINGER; Actor #2, DRUMMER; Actor #3, PUNK SINGER; Actor #4, KEYBOARDIST; Actor #5, GUITARIST. Wait for each to finish loading before loading the next. When Actors 1 through 5 are loaded, press RETURN.

c. You're asked to select MUSIC. For this example, choose SWEET DREAMS. When music is finished loading, you're returned to the Create Video menu.

Note: Once you become familiar with Music Video Kit you'll probably begin storing your own actors, backgrounds, and music on various work disks. To view the menus on these disks while using the above features, simply insert a disk into the drive and press the Space Bar.

2—Record Performances (R) A complete video in Music Video Kit is made up of from one to four **performances**.

SOME THINGS TO KNOW ABOUT PERFORMANCES

In creating a Music Video Kit performance you first record one performance, then, while that one plays back, if you wish, you can record another, and another until you're finished, or until the music stops.

To start recording

a. Press 1. The Rock Stage background appears along with actor #1.

b. Use the CRSR keys to position your actor in its starting position.

c. Use the f1–f8 keys to select colors for your actor

d. When ready, press the firebutton, and move the joystick when the music starts.

During recording, there are many functions you can use to add variety to your performance. The most useful of these is the 'freeze' mode. To 'freeze' your actor anytime during recording, press the firebutton. On the Record Performance screen are listed all the controls you can use during the freeze mode. These are self-explanatory and for your convenience are also listed on the next page. Be sure to try all of them to see their effect.

Use these commands in 'freeze' mode

Press:

CRSR keys to position actor

1–* to select a new actor (* = a number from 1 to 7 depending on the number of actors you selected)

f1–f8 to change colors

T (Text) RETURN to enter text

U to put actor Under the background

O to put actor Over the background

Space to step through the video

S to go in and out of 'slow' mode

RETURN to finish

Shifted 1–4 changes background if you have multiple backgrounds in a file. This is not usually displayed on this menu if only one background is in the file. Note: Changes made using Shift 1–4 are permanent. To delete these changes, start over with Create New Video Mode.

Handy Hint: If, while recording, the border colors start to change, this is a signal you are reaching the limit of record memory. (The size of record memory changes in relation to the length of music used.) In these cases, using fewer joystick movements will use less memory.

When you've finished recording performance #1, you are returned to the Create Video menu. For this example, continue on the next page.

3-Add To Performances (A) Use this mode in combination with **2-Record Performances (R)**. In this manner, you can record a part of a performance and stop. Then, anytime later, you can return to that performance and add-on more, continuing from where you left off.
To see how this works on this example, try these steps:

a. From the Create Video menu choose 2—Record Performances.

b. From Record Performances menu press 2 for Performance #2.

c. When the stage scene appears press 5 to choose the Guitarist actor.

d. When ready, begin recording the performance by pressing the firebutton—only this time, record for about ten seconds, and press the firebutton to freeze.

e. From freeze, press RETURN to return to the Create Video menu.

At this point you have some options. You could

- go to Performance #3 or #4 and record them. Then return to Performance #2 later to finish it.
- finish Performance #2 now.

For this example, finish #2 now. Note: You can experiment on your own with #3 or #4 as just described.

To add on to Performance #2

a. From the Create Video mode press **3- Add to Performance (A)**.

b. From the Add To Performance menu, choose the performance to which you'd like to add—in this case, press 2. All performances begin playing, and continue until the present end of #2 when they all freeze.

c. From here you can use any of the freeze mode commands before continuing recording—change actors, colors, etc. To complete this example, simply press the firebutton, and continue with the Guitarist until the music stops. Note: You can add onto a performance as many times as you'd like.

Add on note: When you're going to Add To A Performance, rather than wait until the present end, you can press and hold the fire button to freeze the action at anytime. Then, you can Add-On and continue the performance from that point.

When finished with Performance #2, continue below.

To see what you've recorded so far, Press 7—Play Video (P) from the Create Video mode.

4—Delete Performances (D) Use this mode to erase any of the four performances with which you're not satisfied. Once you've entered this mode, choose the desired number, the performance is erased and you are returned to the Create Video menu. Deleting a performance leaves all other performances intact.

If you choose to delete ALL performances, press A. This leaves the music and background intact and allows you to start re-recording all performances.

5—Load Video (L)

6—Save Video (S)

7—Play Video (P)

To Play the video presently in memory, press 7.

To Save the video Presently in memory, press 6, type a filename (up to 14 characters), and press RETURN.

To Load a different video, press 5. Note: Be sure you save any video presently in memory that you'll want to use in the future.

STAGING HINTS

As you can see, Music Video Kit gives you four-track video recording capability. Let your imagination run wild and experiment to try and discover new little tricks you can use to make your actors perform. For example, during a performance, walk an actor off the screen, freeze him, choose a new actor, and continue the performance with the new actor. Good performances are going to depend on how closely you watch the boundaries of the background. For example, after reaching the end of the stage, your actor may appear to walk on air. If this is not what you intended, be more careful next time.

Be sure to try all the Music Video Kit actors, backgrounds, and music. Make notes as to which you like the best and which you'd like to combine for future videos.

3—Utilities (U)

The Utilities mode makes available to you handy functions you can use to juggle disk files, edit, load, and save music data, and edit video data. If you choose

1—Full Directory (D), all the files contained on a disk are displayed. Using this, you can easily identify which files you may want to erase or move to another work disk. Also displayed are the number of Blocks Free so you'll know how much room you have left on the disk. Press RETURN to return to the Utility menu.

2—Disk Command (C), allows you to use the common disk drive functions. Simply type the command as shown below, with a file name if necessary as it appears in the Full Directory, and press RETURN. (For more information on disk commands and their use, refer to your disk drive owners manual.)

SØ:TEMP.FILE (delete file)
RØ:NEWFILE=OLDFILE (rename a file)
CØ:COPY=ORIGINAL (copy a file on same disk)
NØ:DEMO.DISK,00 (format:erase a disk)
I:(initialize disk drive)
V:(verify:clean-up a disk)

3—Edit Video & Music Text (T), allows you to view the actor animation data and music data for the video presently in memory. In this mode you can change the various data to accomplish exactly the functions you want.

Note: When you first press 3 for this mode, only the first ten lines of data are displayed. This is usually sufficient to make most video changes you require. If you'd like more data displayed, press L after the READY, and press RETURN. To slow down the display, press and hold the CTRL key. Press RUN/STOP to stop the scroll.

This mode is an advanced function of Music Video Kit and requires you become familiar with the Video commands described elsewhere in this manual (refer to the Index) or, the Music Commands, from the Music Processor.

To exit the Text mode, press RETURN to return to the Utilities mode.

4—Load Music (L), displays a menu of all the music files on the disk presently in the drive. If you are examining several work disks for a certain song,

a. Insert Data Disk (DISK B) or work disk

b. Press Space Bar for new menu (if needed).

Repeat these steps until you find the music file you want. When you find it, press the indicated letter and the file loads.

5—Save Music (S), saves the song presently in memory to the work disk presently in the drive. After you press 5 you are prompted as an option to press f1 for a directory. This is useful so you don't duplicate a file name already on the disk.

If you do duplicate a file name, the previous file is erased and replaced by the new file. To save your music, type a file name (up to 14 characters) and press RETURN. When saving is finished, you are returned to the Utilities menu.

USING COMPUTER SONG ALBUMS OR MUSIC PROCESSOR SONGS

Songs on these programs, in some cases, contain more data than Music Video Kit can use at one time. However, you can alter them by using the WIPE command to delete the data not used by Music Video Kit. Here's how it works:

a. From the Utilities mode press 3.

b. Insert Computer Song Album or Music Processor disk in drive.

c. Optional: Type DIR and press RETURN for a look at the directory.

d. Choose a song file (not an MVK.file from Song Album).

e. Type LO Songfile name. This loads the chosen file.

f. To clear the data not needed, type:
WIPE / and press RETURN
WIPE L and press RETURN
WIPE P and press RETURN

These steps delete measure marks, lyrics, and optional special effects.

ANOTHER METHOD TO SHORTEN COMPUTER SONG ALBUM SONGS

a. From the Utilities mode press 3.

b. Type DIR and press RETURN for directory.

c. Choose an MVK. file and type J MVK.Songname and press RETURN. This step loads a song, performs all the WIPE commands, and removes parts of the song to make it shorter.

SAVING YOUR SHORTENED SONG

Important Note: To save your shortened song you MUST use the Save Music mode.

a. From the Utilities mode press 5

b. Insert work disk.

c. Type the song filename (up to 14 characters).

d. Press RETURN.

When saving is completed, you can check the directory of your work disk by pressing 1 from the Utilities mode. There you'll see your song file has been saved. The title now appears with an "M." preceding it.

A NOTE ABOUT MEMORY OVERFLOW

In some cases when using shortened songs from Music Processor or Computer Song Albums, you may still encounter running out of memory during a performance. Either a "TOO FULL. . ." error message, or a very low "Free Memory" number will appear below the Create Videos menu. In these cases simply use a shorter song to record your performance.

4—Graphics Editor

Press 4 from the Main Menu—be sure System Disk A is in the drive. This is the part of the program called the Graphics Editor. Loading takes approximately 1 minute.

GRAPHICS EDITOR

The Graphics Editor mode of Music Video Kit is a full-feature graphics utility. It can also be used to modify actors and backgrounds already provided on Music Video Kit.

The Graphics Editor has several menus that make it easy to use. The ACTORS and BACKGROUNDS menus have several selections in common: LOAD, SAVE, and DRAW. These allow you to load from disk, save to disk, and draw either actors or backgrounds with a joystick.

In the next few pages, a step-by-step example of drawing and animating an actor is given. You'll also learn how to create a background for your actor. These hints touch lightly on some of the features of the Graphics Editor. If you'd like to delve deeper into any area, check the detailed command lists or the Index for the help you need. The command lists are grouped by menu.

GRAPHICS EDITOR MAIN MENU

The main Graphics Editor menu allows you to choose from Edit Actors, Edit Backgrounds, Utilities, or Performer. To select a mode, press either the number to the left of it or the letter in parentheses to the right.

1—Edit Actor (A)

Selecting this mode gives you a new menu.

1—Load Actor (L) displays a list of all the actors contained on the disk presently in the disk drive. To choose an actor, press the letter indicated.

You may have other actors stored on different work disks. To access the actors on these disks, insert a different work disk and press the Space Bar to view a list of actors on that disk.

2—Save Actor (S) saves the actor data in memory to a formatted work disk presently in the drive. After pressing 2 or (S), you are prompted optionally to PRESS f1 FOR A DIRECTORY. This is useful so you don't duplicate a filename already on the disk.

However, if you do duplicate a filename, the previous file is erased and replaced by the new file.

To save an actor file, type a filename (up to 14 characters) and press RETURN. When saving is finished, you're returned to the ACTORS menu.

3—Draw Actor (A) is the actor shape editor. NOTE: When selecting this mode, you may find some actor shapes already there. To delete these, press RETURN and 6 -DELETE ACTOR (D) and answer (Y)es to the prompt. This clears the actor editor.

A color monitor screen is made up of small dots called pixels. By turning these pixels "on" and "off", you can create "pictures."

Built into the Commodore 64 is the ability to create up to 8 special pictures or shapes, called "sprites." These sprites are called "shapes" in Music Video Kit. They are "special" because they can be moved around and manipulated to create animation. Each shape can be 21 pixels high by 24 pixels wide. (For detailed and technical information regarding "sprites", refer to the Commodore Owners Manual or the Commodore Programmers Reference Guide.)

The box on the screen to the left represents an enlarged actor shape 21X24 pixels (the dots represent the pixels).

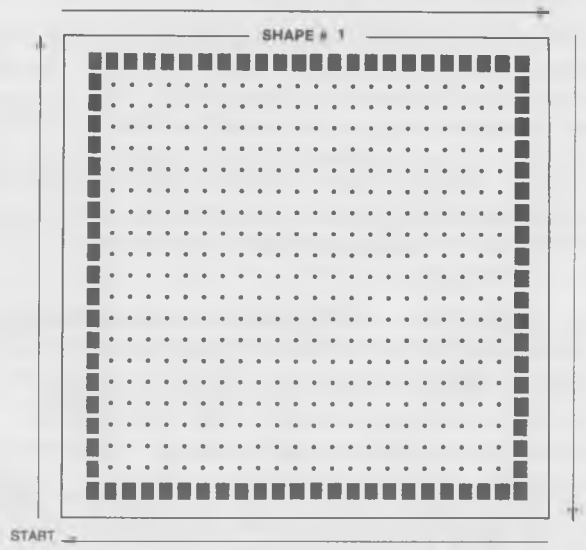
Notice the red cursor. The cursor can be controlled either from the keyboard or with a joystick. In both cases, it can only be moved right, left, up, and down.

KEYBOARD—To move the cursor, use the cursor keys. A pixel can be altered by using the first three commands listed on the right side of the screen. (See page 82 for a more detailed explanation of these commands.)

JOYSTICK—Move the cursor with the joystick. The fire button changes the pixel under the cursor: If a pixel is already set or turned on, the fire button turns it off; if it's off, the pixel is set. The fire button can be held and the cursor moved continuously to set or clear pixels. This is not the case when controlling the cursor from the keyboard.

SOMETHING TO TRY

Press and hold the fire button and with the joystick, move the cursor up to the top of the box; then across to the right; then down to the bottom of the box; and finally, back to the left end of the box.



While doing this, watch the shape created in the lower right corner of the screen. Continue experimenting by moving the cursor within the box and drawing whatever you'd like.

When you're ready to continue, press and hold SHIFT and CLR/HOME. This erases whatever is drawn in the box.

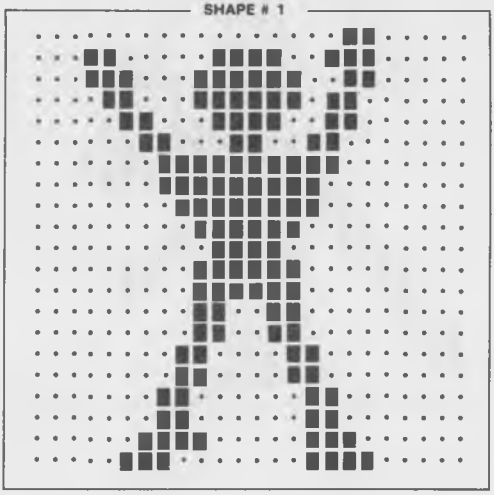
CREATING AN ACTOR

Drawing an actor is accomplished in much the same way cartoon animators make separate drawings for different positions. Then by rapidly sequencing through the drawings, the effect of motion, or animation, is achieved. NOTE: If you've never drawn before, you may not always be satisfied with some of your drawings. For helpful hints in drawing, examine the actors provided on Music Video Kit. With a little practice, your drawing techniques will eventually improve.

Use the following steps to create an actor that does a cartwheel. It uses a simple "stick" figure with which you can try many of the actor editor commands. (For a description of all the actor editor commands, see page 82.)

STEP 1: Press D from Actor menu and answer with A to clear actor memory. To start, be sure Shape #1 is showing (use + or − to sequence to Shape #1).

STEP 2: By turning "on" pixels, draw Shape #1 as shown.



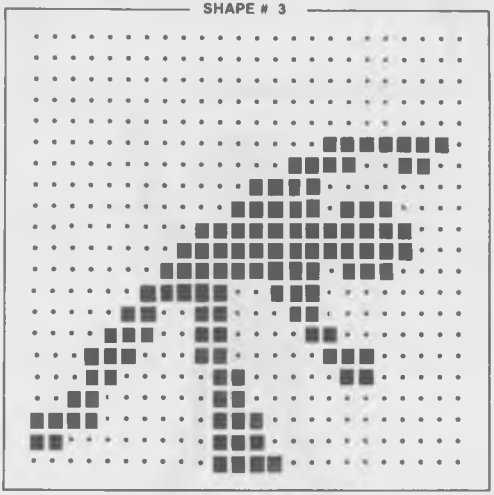
STEP 3: Advance to Shape #2 by pressing the + key. The easiest way to create animation, is to use the previous drawing and alter it slightly. To do this, press T for Transfer. Respond to the prompts under the drawing areas as follows:

PROMPT	TYPE
SOURCE START #?	1 (and press) RETURN
SOURCE END #?	1 (and press) RETURN
DESTINATION START #?	2 (and press) RETURN

You've just transferred Shape #1 to Shape #2. (Press − (minus) and you'll see Shape #1 is identical to Shape #2.) Return to Shape #2.

STEP 4: Press H to "flip" the image horizontally. To see the effect of this flip, alternate between Shapes #1 and #2 using the − and + keys. The actor moves his arms and feet.

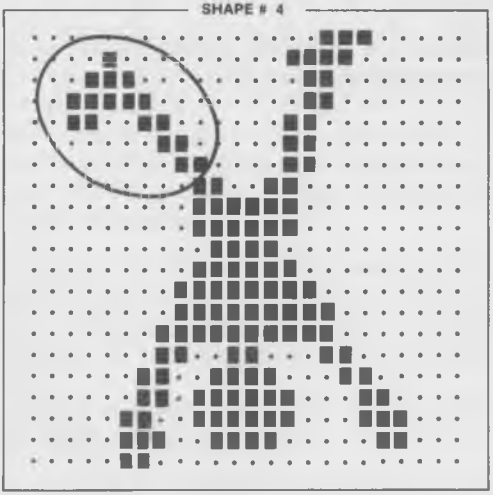
STEP 5: Advance to Shape #3 and draw as shown.



STEP 6: Advance to Shape #4. Transfer to here Shape #2 by answering the prompts:

PROMPT	TYPE
SOURCE START #?	2 (and press) RETURN
SOURCE END #?	2 (and press) RETURN
DESTINATION START #?	4 (and press) RETURN

STEP 7: Here's where the magic of the actor editor is used to easily create a cartwheel. To turn the actor in Shape #4 on his hands, press V and alter the highlighted pixels in his left leg as shown.



STEP 8: Advance to Shape #5. Transfer Shape #2 to Shape #5. (Be sure to type 5 and press RETURN in answer to the DESTINATION START #? prompt.)

STEP 9: Flip Shape #5 vertically with the V key.

STEP 10: Advance to Shape #6. Transfer Shape #4 to Shape #6.

STEP 11: Flip Shape #6 horizontally with the H key.

STEP 12: Advance to Shape #7. Transfer Shape #3 to Shape #7.

STEP 13: Use the H key to flip the image horizontally.

This completes the drawings necessary for an actor to perform a cartwheel.

TO VIEW YOUR DRAWINGS

You can review the shapes you've drawn, starting with Shape #1. Press the S (Select) key. Answer 1 to the prompt and press RETURN. Press the + key to sequence through the shapes you've drawn. When you're finished, press RETURN to return to the ACTORS menu.

4—Create Actor Animation (C) Another menu appears. Using this mode tells the computer which actor shapes to use when moving the joystick in different directions. For example, when you push the joystick to the right, the actor should also move to the right, etc.

STEP 1: Press I to initialize actor animation and type (Y)es in response to the ARE YOU SURE prompt. This erases any previous joystick commands. NOTE: Once you've started defining actor animation, DO NOT press the I key again as this will erase any current actor animation.

STEP 2: Press the M key. In this mode you can describe some of your actor's actions. For example, if REPEAT is ON, your actor will perform that action over and over as long as you press the joystick in that direction.
Pressing the 1 key turns REPEAT on and off. For this example, REPEAT should be on.

STEP 3: Press 2 to change the DELAY time. DELAY is the amount of time that passes between each movement of the actor. DELAY times are expressed as musical time values. This is described on page
In the SELECT DELAY menu, 1 is the shortest DELAY; 6 is the longest. The shorter the DELAY, the faster the actor moves. For this example, press 3 to select E (EIGHTH NOTE).

STEP 4: Press 3 to SELECT DISTANCE. DISTANCE is the amount of pixels the actor travels between each movement. For this example, press 4.

STEP 5: Press RETURN to exit this mode to return to CREATE ANIMATION menu.

MAKING YOUR ACTOR MOVE

To define an action for your actor, pick a direction on the joystick. For example, to make him perform cartwheels to the Right, press 4. In this new display, you must record the shapes the actor performs as he moves to the right.

The + and − keys are used to select each shape. Press the Space Bar after each selection to record it. For this example, record these shapes in the following sequence: 2, 3, 4, 5, 6, 7, 1. When finished, the COUNT should equal 7. This is how many shapes the actor goes through when you push the joystick to the right. Press RETURN.

You can also make your actor do cartwheels to the left. Press 8 to select the LEFT direction. This time, record the shapes as you did above only in *reverse* order: 1, 7, 6, 5, 4, 3, 2.

TRY OUT YOUR ACTOR

Press * to animate. As you move the joystick to the right and left, your actor performs cartwheels to the right and left. NOTE: Your actor will "wrap"—if you continue to hold the joystick right or left, your actor will disappear, but then will reappear on the opposite side of the screen. Also, you can "freeze" animation by pushing the firebutton. To resume animation, press it again.

When you're through viewing your actor, return to the ACTORS menu by pressing RETURN twice.

TO SAVE YOUR ACTOR

To save your actor, refer to 2—SAVE ACTORS (S) on page 24. After saving, you'll be returned to the ACTORS menu.

5—Animate Actor (*) This allows you to try the actor and its animation presently in memory directly from the ACTORS menu. When you use this mode and the 1—LOAD ACTOR (L), you can quickly try out various actors from any work disk.

6—Delete Actor (D) If you choose this mode and answer (Y)es to this prompt, you delete the actor shapes and animation currently in memory. This clears the entire actor editor so you can easily create new actor shapes. CAUTION: Be sure you save your "good" actors on a work disk before using this command.

7—Edit Actor Text (T)

This allows you to add, delete, or change many of the things your actor does. Following is just a sample of many of the possible things you can do.

STEP 1: If you previously used 6—DELETE ACTOR (D), reload your cartwheel actor using 1—LOAD ACTOR (L) command.

STEP 2: Press 7. Notice lines 5Ø and 9Ø contain data. Using the cursor controls, move up to line 5Ø.

STEP 3: Make the changes indicated in bold:
5Ø ↑(S=[2,3,4,5,6,7,1],H=H+**8**,DPT)↑

STEP 4: Press RETURN.

STEP 5: Move the cursor to line 9Ø and change the bold as shown:
9Ø ↑(S=[1,7,6,5,4,3,2],H=H−**8**,DPE)↑

STEP 6: Press RETURN.

STEP 7: Move the cursor to below READY and press RETURN to return to the ACTORS menu.

STEP 8: Press 5—ANIMATE ACTOR (*). Use the joystick and notice the results. NOTE: For more details on editing actor text, see page 51.

HERE'S SOMETHING YOU CAN TRY

STEP 1: For this example, be sure your cartwheel actor is loaded in memory.

STEP 2: Press 3—DRAW ACTOR (D).

STEP 3: Use + or − to go to Shape #1. Type EH and EV and notice the change to the figure in the lower right corner. EH expands the horizontal size of the shape; EV expands the vertical size. NOTE: In the expanded mode, only the figure in the lower right corner changes—not the shape in the box.

STEP 4: Repeat the EH and EV commands for the remaining Shapes #2 through #7.

NOTE: The expanded shapes are more coarse in appearance, but may be more desirable because of their larger size.

STEP 5: Press RETURN to return to ACTORS menu.

STEP 6: Press 5—ANIMATE ACTOR (*) and use your joystick to animate your new-sized actor.

THE MULTICOLOR MODE IN THE ACTOR EDITOR

This mode allows you to create actor shapes in up to four colors. Although it is a little more challenging to use, you'll soon find with a little practice you'll create more detailed and satisfying actors. When you draw in Multicolor mode, pixels are turned on in pairs rather than singly as before. If you have difficulty placing a pixel of a certain color exactly where you want it, you may have to compromise and put it near where you want. With a little experimenting you'll soon discover how to handle these situations.

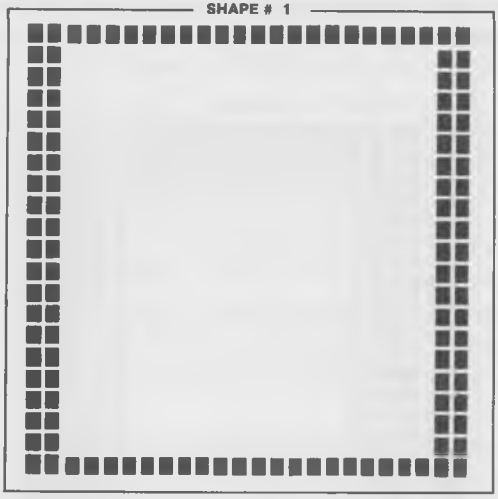
To sample how this mode works

STEP 1: Press SHIFT CLEAR to clear memory. From the actor editor screen press M for Multicolor (all the dots should disappear).

STEP 2: The cursor should be in the lower left corner of the box.

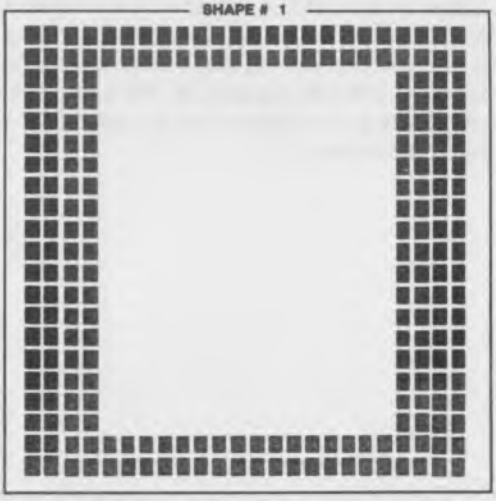
STEP 3: Note the Color Number 1 at the upper left of the box. Press the C key until a desired color appears.

STEP 4: Press and hold the firebutton and with the joystick move the cursor up the left side of the box, then across the top, then down the right, then across the bottom completing a square.

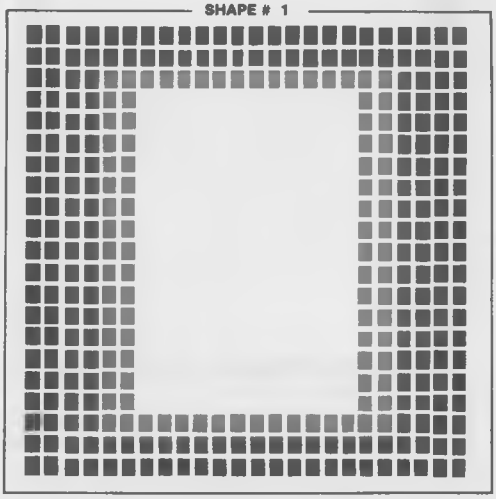


STEP 5: Press 2 to change the color number. Press the C key until a new color you'd like to use appears.

STEP 6: Place the cursor just inside the first square, and start drawing a new square in the new color.



STEP 7: Press 3 and create another square in the same manner inside the first two. Your drawing should look similar to the one below.



This completes the steps necessary to create an actor shape in three colors. Although this is a simple square, using a little imagination you'll be able to create more interesting shapes. To obtain the fourth color, use the double shape function explained in the pages that follow. Then, after drawing a second shape, use the B key to change the fourth color.

Note about color changes: The method used by Music Video Kit to handle color changes is inherent to the Commodore 64. In an actor file, you are able to create up to 127 actor shapes. In Multicolor mode, if you change color #1 or #3 for one of the shapes, those same colors change for all of the shapes in that file. In Music Video Kit these are called **COMMON COLORS**. It is important to take care which parts of an actor shape are made of which common color. If you happen to change one actor's pants to blue, you could unknowingly be changing another's face to the same color.

Color #2 in each shape in Music Video Kit is called a **PRIVATE COLOR**. When you change this color, it changes only in the shape you specify and not the others in that file.

Note: For more help and ideas in creating Multicolor actor shapes, study those included on the Music Video Kit disks. To start, good examples are the Female Singer, Guitarist, Keyboardist, and Punk Singer.

DOUBLE ACTOR SHAPES

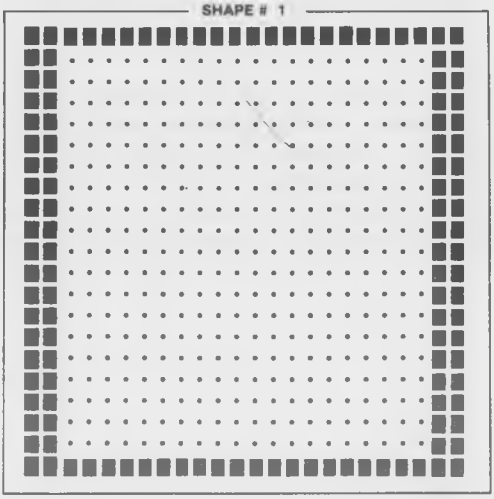
The Double Actor Shape mode is used in the Draw Actor mode and initially appears in the list of commands, as : **DBL OFF**. You can use it to link two shapes together to create larger, more detailed actor shapes. Or, you can over-lay two shapes to create four-color actors and unique animations. Follow the steps below as a simple sample of the effect of the DBL function.

STEP 1: From the Actors menu, press D to clear the Actor editor.

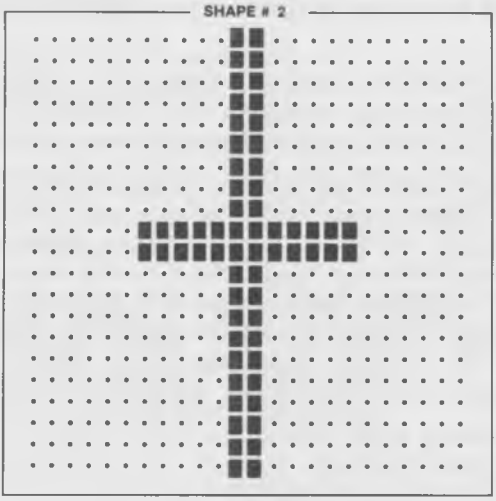
STEP 2: Choose Draw Actor mode.

STEP 3: Be sure Shape #1 grid is showing.

STEP 4: Draw Shape #1 as shown.



STEP 5: When finished, press the + key to display the Shape #2 grid. Draw Shape #2 as shown.



STEP 6: With the − (minus key) return to Shape #1.

If the DBL function is off, only Shape #1 shows in the lower right corner. If you press the : key, you turn on DBL OVER and both Shapes #1 and #2 appear. Press the : key again to turn on DBL HORIZ which displays the two shapes side-by-side. Press the : key again and the DBL VERT displays the two shapes one on top of the other.

Important note: As you create double shapes, remember the first shape of a pair is always linked to the next actor shape. For example, #1 to #2, or #24 to #25, etc. DBL is **on** in the first shape of a pair and **off** in the second.

The DBL HORIZ is useful in creating long, horizontal actors such as a dog, airplance, etc. The DBL VERT is useful for tall actors such as humans, trees, giraffes, etc.

Once DBL is turned on, you can change colors of the individual shapes using the C key to change the color of Shape #1, and the B key to change color of Shape #2. If you're using Multicolor mode, the C and B keys change color #2, the 'private' color of each shape (see Multicolor mode, page 39). If you choose to change color #1 or #3, the common colors, the C key changes either in both shapes.

When Creating Actor Animation, DBL actors are recorded using the shape number of the first shape of the pair.

2—Edit Backgrounds (B)

1—Load Backgrounds (L)

2—Save Backgrounds (S)

4—Delete All Backgrounds (D)

5—Edit Background Text (T)

These commands in this mode function just as Load, Save, Delete, and Edit in the Actor Editor. See pages 24, 33, and 34.

3—Draw Background (B)

MAKING A SIMPLE BACKGROUND

Now that you have an actor, you need a background in which he can perform. This is where the Edit Background mode comes in. A complete Background is made up of smaller components called "characters." Characters are the "building blocks" used to piece together an entire background.

To create a simple background for your actor who does cartwheels:

STEP 1: From the Graphic Editor Main Menu, press B to select the Edit Background mode. Press D to clear background memory.

STEP 2: Press B to enter the Draw Backgrounds mode. (The first time you enter this mode, the HELP screen appears. When this happens, press the Space Bar.) Then press the / key to display the character shape editor.

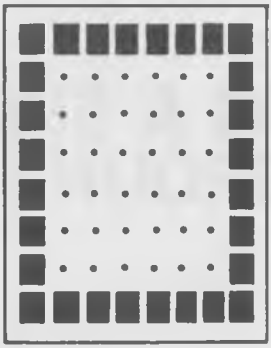
The character shape editor works in much the same way as the actor shape editor, except each character drawing area is only 8x8 pixels—the actor drawing area is 21x24 pixels.

STEP 3: Press S to Select which character you wish to work on. (S is also used to Select the actor in the actor shape editor.)

STEP 4: Press 2 and RETURN. You are now ready to draw your first building block.

STEP 5: Draw the character shown below using the joystick or keyboard.

CHARACTER # 2



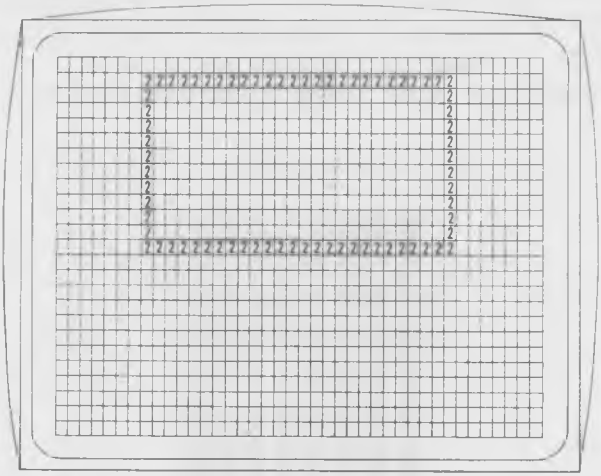
Notice the character appears near the bottom of the screen in two places: The image on the right is the character you've just drawn or selected; the flashing image on the left is part of a 4x4 character group called a "prop" (see page 48 for more information).

You can now use the character to draw part of a background.

STEP 6: Press the / key to enter the Draw Background mode. The flashing area is once again the cursor. Use the joystick to move it around and the firebutton to place it on the background.

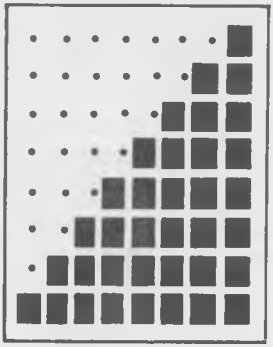
To change the color of the character, press the C key repeatly. SHIFT C reverses the color change progression.

STEP 7: Draw a pattern as shown in your favorite color.



STEP 8: Press the / key to switch back to the Draw Character mode. Select Character #3 and draw a character like this:

CHARACTER # 3

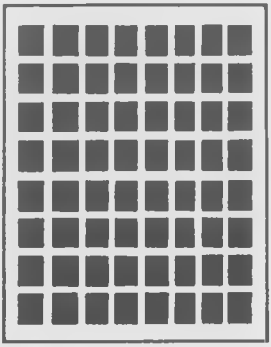


STEP 9: Press the + key to advance to Character #4 and Transfer Character #3 to Character #4.

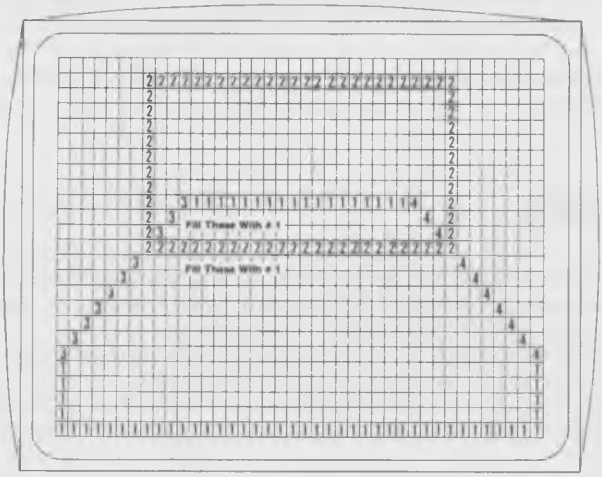
STEP 10: Press the H key to flip the character horizontally.

STEP 11: Press the — (minus) key to get to Character #1 notice that it's completely filled in.

CHARACTER # 1



STEP 12: Press the / key to go back to the Draw Background mode. Using the + and − (minus) keys to select Characters #1, #3, and #4, add to your background as shown. The Space Bar can be used to erase any unwanted characters.



If you're satisfied with the background you've just drawn, you can Paint interesting color patterns.

STEP 13: Press the P key. Select the and colors (use the C key and/or SHIFT C) you wish to Paint. Keep pressing the P key while moving the cursor around.

Try horizontal stripes or a checkerboard pattern to start. Note: An "Example Background" is included on the Data disk (DISK B).

STEP 14: Press RETURN to exit and press the S key to save your new background to your work disk.

VIEWING YOUR ACTOR AND BACKGROUND

To see your actor performing cartwheels on the background you've just created, simply go to the actor menu and load him from your work disk and press the * key.
On the Data disk (DISK B), we've included our versions of the actor and background you just created in the event you'd like to do a comparison. This may help you to improve your drawing techniques.

PROPS

As you draw characters in the Draw Character mode, a special display appears below the drawing grid. Using it, you can view a 4-character by 4-character block called a **prop**.
A prop is useful because it allows you to place 16 characters at one time in the background. You can also create articles or parts of articles to appear in your background. Or, you can create part of a pattern and use it to "stamp" that pattern in the background quickly.
The first prop you are able to create uses characters Ø through 15. The next uses 16 through 31, and so on up to 255.

0	1	2	3
4	5	6	7
8	9	10	11
12	13	14	15

16	17	18	19
20	21	22	23
24	25	26	27
28	29	30	31

240	241	242	243
244	245	246	247
248	249	250	251
252	253	254	255

Once you've created a prop, you can place it on your background.

STEP 1: In the Draw Character mode, use + or — to move to a character contained in your prop.

STEP 2: Press the / key to go to Background mode.

STEP 3: Position the cursor where you'd like the prop to appear.

STEP 4: Press the @ key to place your prop.

You can also use the Paint feature (P) to alter your prop in the background mode.
Note: In creating props, it's recommended you start with characters 16 through 31 rather than Ø through 15. This is because character Ø is normally cleared.

ADVANCED BACKGROUND COLOR MODES

Note: Refer to the Commodore Programmer's Reference Guide for an extensive description of these modes.

Extended Mode

Press the E key from the Edit Backgrounds Mode. This mode allows you to select one of four background colors for each individual character in the background. Press the 1, 2, 3, or 4 key to select which background to use. Press B or Shift B to change the selected background color. Press C or Shift C to change the character color. The background color is the "off" pixels; the character color is the "on" pixels.

Note: You can only use character Ø through 63 in the Extended mode.

Multicolor Mode

Press the M key while in Edit Backgrounds mode. You can get up to four colors in each character.

The Character Shape Editor shows a screen similar to the Actor Shape Editor in multicolor mode (see Page 25), but you use 1, 2, 3, and 4 to select colors instead of Ø, 1, 2, or 3. Colors are changed in Edit background mode rather than in Character Shape Editor. Colors 1, 2, and 3 are Common colors to the whole background and are selected in the Edit Background Mode by pressing 1, 2, 3 to select, and B or Shift B to change.

Color 4 is considered the character color (Private) and is changed with C or Shift C. You can only use color Ø through 7 for the character color. You can mix Normal characters with Multicolor characters by pressing the N key in Edit Background mode, drawing normal characters, and pressing M to return to multicolor mode. You must select colors Ø through 7 for your normal characters (you can check character color with the H Help mode).

3—Utilities

1—Full Directory (D)

2—Disk Command (C)

These functions are the same as those in the Performer mode and are described on page 18.

3—Load Koala File (K) Using the KOALA Brand Touch-Tablet, you can create backgrounds and scenery for your Music Video Kit performances. Or, you can use any of the Koala pictures you've presently stored on disk.

To view your Koala scenes using this function, simply insert a Koala disk, press 3 from the Utilities mode and a menu of your Koala files is displayed. Choose a file and press the indicated letter to load. When loading is finished your Koala scene is displayed.

Once your Koala file is loaded you can save it to a Music Video Kit work disk using the Save Backgrounds mode in the Backgrounds menu. When you return to the Performer mode you can load these files just like normal backgrounds.

4—Performer

Press 4 from the Main Menu to load the Performer part of the program. Be sure System Disk (DISK A) is in the drive. Loading takes approximatley 1 minute.

When loading is complete, press the C key, insert work disk, and press C again to create a new video. This time use your new background, and actor. Choose the music you think is best.

MUSIC VIDEO KIT ADVANCED DOCUMENTATION

THE GRAPHICS LANGUAGE

All graphics commands start with the symbol @. @1,@2,@3,@4,@5,@6,@7,@8 all control the sprites.

@Ø controls the screen action.

@9 is a spare for general processing.

@A,@B,@C,@D,@E,@F define subroutines.

@BK selects a background.

The graphics language is a simple interpreter in which there are special variables which control the screen action. For instance, @1,H=1ØØ,V=57 will set the horizontal location of sprite #1 (sprites are numbered 1 through 8) to be 1ØØ, and the vertical position to be 57.

You can also read data from these special variables: @1,H=H+1 will get the current horizontal position for sprite #1, add 1 to it, and store it back to the horizontal position. This moves sprite #1 one increment to the right.

An important thing to realize about this language is that when the music system encounters the @1, it doesn't perform these operations immediately, but copies the @1 line to another place in memory and starts it going. This means that if your command takes time (such as an embedded delay), then your tune will continue on while the command is still executing. In fact, you can have up to 1Ø (@Ø-@9) commands executing at the same time, in addition to your tune! This is very useful for starting some activity on the screen, then adding another activity without interfering with the first. If you begin with a comma (@1, . . .), then it will interrupt any activity for that command, but if you start with a slash (@1/ . . .), then it will pause in the tune until the activity for that command is finished before starting the new command.

VARIABLES

H

Sets the horizontal position. The screen is numbered from left to right. In sprites, Ø on the left is off the screen (this allows you to have things "wander off" the screen). For characters (@Ø), this is the column position.

```
@1,H=1ØØ
@4,H=H+12
```

V

Sets the vertical position. The screen is numbered from bottom to top. This is the opposite of what the hardware is!

```
@1,V=34,H=V
@Ø,H=Ø,V=Ø
```

C

Sets the color. Should be from Ø to 15.

```
@1,C=1
@2,C=5
```

S

Sets the shape. For sprites, turns the sprite on, and gives it its shape number (1-127) determined in the video editor. It works differently for the character mode (@Ø). In character mode, you set H,V and C and then when you set the shape, that character (Ø-255) is stored to the background at that location in that color.

```
@6,H=34,V=H+1Ø,C=3,S=21
@Ø,V=1Ø,H=Ø,C=Ø,S=1
@Ø,H=H+1,S=143
```

X,Y,Z

These variables don't actually do anything, but are used for computing intermediate values.

```
@5,X=1ØØ,H=X,V=X
@6,Y=5,X=2Ø,H=X+1Ø-Y
@7,Z=Z+1,H=H+Z
```

Rn

This is one of the 47 (Ø-46) VIC chip registers. This gives you direct control over the VIC chip.

```
@1,R28=$FF,R37=3,R38=1,R32=R32+1
```

Mn

This allows you access to the memory of the computer. n should be a number from Ø to 65535 (it may also be a variable such as H or X). It loads or stores a number from Ø to 255 (1 byte).

```
@3,M54273=M54273+X
@2,R32=M$D41B
```

?n

This generates a random number between, and including, Ø to n. n may be between Ø and 255 or may be a variable such as H or X. You may not store data in this variable (no ?1=1Ø).

```
@3,C=?15,V=?4Ø+5Ø
@Ø,H=H+1,S=?255
```

#

This gives the number of the command you are in. If you are dealing with sprite number 4, it will give a 4; if you are dealing with the characters (@Ø), it will give a Ø. You may not store data in this variable (no #=7). This is very useful in the subroutines (@A—@F) discussed later.

```
@1,C=#
@6,H=#+#+#+#+1ØØ
```

[. . .]

This gives a sequence of values. Start with the left square bracket ([), then a value (the value may be a number, a variable, or an arithmetic statement), then a comma, then another value. You may put as many values as you want, then end it with a right square bracket(]). The first time the command is executed in the program (there are functions to be discussed later on looping), it takes the first value. The second time through, it takes the second value, and so on. After using the last value, it starts over again on the first value. It always starts at the first value, even though you may play the tune several times.

```
@1, (S=[31,32,33,34,33,32],P1Ø)
@2,L5(C=[X,X+1,X+2,X+3,X+4];;;)
```

MORE ABOUT VARIABLES

The variables H,V,C,S,X,Y,Z all use 16 bit values. Only the portions of the value that is pertinent to the function are used, but the full 16 bits is saved for use on the right side of the =. Each of the 1Ø commands (@Ø – @9) have their own distinct variables;

@1,H=1ØØ does not affect the H variable in the @2 command.

The H,V,C,S variable in @9 have no effect other than to store the data similar to X,Y,Z.

You may override the @n by following the variable name with a number Ø – 9: @1,H2=H2+1Ø allows you to change the variable and horizontal location of sprite number 2, even though you are "in" the sprite number 1 command.

ARITHMETIC

The math of the graphics language is evaluated in a strict left to right manner, with no "hierarchy" of precedence. You may start the expression with a constant, a variable, or an operator (this is only useful in the case of —). The constants are decimal numbers from Ø to 65535, or if you start them with a $, then they are hexadecimal numbers from $Ø to $FFFF. You may use the single quote (') to get the ASCII value of a character. Use: 'X'.

+

Addition, 16-bit unsigned (actually, you can have 2's complement negative numbers, but the conditional operations will treat them as unsigned numbers).

```
@7,C=C+1
@8,S=S7+1
```

—

Subtraction.

```
@2,H=H-1
@5,V=V-2Ø
```

A

And. The 16-bit bit-wise logical "and" operation.

```
@1,R29=R29A$FE
@3,C=C+1A7
```

O

Or. The 16-bit bit-wise logical "or" operation.

```
@2,R28=R28O1
@5,R17=R17O$1Ø
```

E

Exclusive Or. The 16-bit bit-wise logical "exclusive or" operation.

```
@3,H=H+15E$55
@1,R29=R29E1
```

*

Multiply by 2 (arithmetic left shift). This command is not followed by a value to the right.

```
@4,V=#***
@1,H=H*,V=#****+4Ø
```

/

Divide by 2 (arithmetic right shift). This command is not followed by a value to the right.

```
@5,C=#/
@9,X=H1/+12
```

FUNCTIONS

Functions perform various tasks such as program control, etc.

, (comma)

This is not really a function—it merely separates operations and functions from each other.

@3,H=1Ø,V=1ØØ,C=5,S=112

;

Pauses for one 128th note interval. Note that this is not a pause in addition to the time taken to execute operations, rather, it waits until the next 128th time frame occurs. It also serves the same function as the comma, which is to separate functions.

@1,H=1ØØ;H=12Ø
@3,X=Ø,H=Ø,(H=H+X,X=X+1;;)

Px

Pauses for the designated note duration. x should be W,H,Q,E,S, or T.

@4,(H=H+1,PS)
@5,S=1Ø,PW,S=11,PW,S=43

Pn

Pauses for n 128th note intervals. n may be any value from Ø to 255, and may be an expression.

@7,X=1,(H=H+1,PX,X=X+1)
@6,H=5,P7,H=1Ø

P!

Pauses until the synchronization command (!) is executed. This is useful for making sure that differing operations are in correct synchronization with each other.

```
@1,P!,(V=V+1,H=H-2;;)
@2,H=1ØØ,V=H,C=2,P!,S=5
```

!

Initiates the synchronization.

```
@1,P!,S=1Ø
@2,P!,S=11
@9,!
```

PVn

Pause till voice #n (1-3) begins a note.

```
@1,(C=1,PT,C=2,PV1)
```

(. . .)

Creates a loop. All operations between the (and) will repeat continuously, until stopped by another @n command or the end of the tune. You may have loops within loops within loops. This is called "nesting". If you have no pause functions within the loop, the tune will "hang" in that loop until the run/stop key is pressed.

```
@1,X=1,(H=H+X,V=V-X+5,X=X+1A15,PT)
@2,(C=C+1;)
```

Ln (. . .)

Loops n times. n may be between Ø and 65535 and may be an expression. If you have no pause, then the tune will "hang" until RUN/STOP is pressed or the looping is finished.

```
@Ø,V=Ø,H=Ø,C=2,L4Ø(S=S+1,H=H+1)
@1,(L1Ø(V=V+1,L14(H=H-1;))
```

Wn=m(. . .)

Loops while n is equal to m. Both n and m may be values or expressions, and you don't have to use = for the condition. You may use not equal <>, greater than >, less than <, greater than or equal to >=, or less than or equal to <=.

```
@1,WH<=100(H=H+1;)
@2,WXA$10<>0(L10(H=H+X),X=X+1;)
```

In=m(. . .)

If n equals m then execute what is in the (. . .). It does not loop. It has the same options for n=m as the W (while) function.

```
@1,X=1,(H=H+X,IH=120(X=-1),IH=15(X=1);)
@5,(V=V+1,IV=150(V;=10),PE)
```

Fn=m

Copies the form from character number m to character number n. This means that any characters of the value n that are on the screen (or will eventually be) will have the shape of character m, even though the character number will still be n. This allows you to have dynamically changing character shapes on the screen, without having to actually replace them in the background.

```
@9,(F5=[10,11,12,11],PQ)
@0,(F6=X+21,X=X+1A7,P70)
```

T"text"

Prints a text in the background at the current character (@Ø) H and V location. The text is converted to the equivalant screen character codes, and printed horizontally in the color of the current character color. This operation does not alter H, V, or C. If you put a value between the T and the first ", then this value will be added to characters before storing to the background.

```
@Ø,H=Ø,V=1Ø,C=Ø,T"HELLO, THERE"
@Ø/V=9,T64"AND GOODBY"
```

@A-@F

Executes a subroutine. when the @A,@B,@C,@D,@E, or @F command lines (the lines start with @x) are executed in the tune, these lines are just stored (you can have up to 6 at the same time: A-F). When the @x is used in a @Ø – Ø9 command, that is when the @x is executed. After doing whatever it does, it returns to where you used the @x in the @Ø – @9. While in the subroutine, the variables retain the same designation as the @Ø – @9 that called the subroutine. That is, if @3 used an @C, then any reference to H in @C would refer to H3 and not any other (unless specifically overridden). The subroutine definitions (starting with @x) should appear in the tune before they are used. You may redefine a subroutine at any time, but you must make sure that it is not in current use.

```
@A,P!,L2Ø(H=H+#)
@1,V=1Ø,H=1Ø,@A
@2,V=1Ø,H=1Ø,@A
@9,!
```

J

This variable gives the current input from joystick port 2. Mask bits to determine joystick switch position. May only appear on the left of the = sign.

@A,(IJA1=Ø(C=C+1),IJA2=Ø(C=C—1);)

J

This looks like the J joystick variable, but is used as a function, not a variable (no = sign). It does a JSR to a machine language subroutine (the subroutine should end with an RTS instruction). The address of your subroutine immediately follows the J function.

@1,J$FFE7
@2,(J35Ø12;)

K

This is a variable that you may use on right of the = sign. When used, the system stops entirely and waits for the keyboard to be pressed. Then, it returns the ASCII value of that key.

G

This does a goto in the music code. The G is followed by the line number. This is a difficult command to use, because it is executed in graphics command line which is running independently from the music code. Also, remember that line numbers are not saved with the music code, so the tune is re-numbered when loaded from disk.

@4,G21Ø
@4/

SPECIAL CONSIDERATONS

Keeping in mind that this program runs on an inexpensive Commodore 64 home computer, when you have a tune playing, 1Ø independent graphics programs running, and perhaps several musical special effects, all happening at the same time, it is possible to simply run out of time. Nothing catastrophic happens if it does run out of time, the music just slows down and the timing gets a little sloppy. There are several techniques that can be used to solve this problem. You can slow down the tempo of the tune (using the Music Processor Tn command) to allow more time to execute graphics in between the 128th note intervals. You may want to adjust the music notation back to normal (all Q's become E's, E's become S's, etc.). It also helps to cause your graphics to be staggered. That is, not have the complicated functions of all 1Ø graphics programs occur at the same time. An easy way to do this is to start the commands with P#, which will pause for a different period for each program. You can re-write your programs to maximize the pause time: use (H=H+4,P4) rather than (H=H+1,P1).

A special consideration for the use of the [. . .] sequence function: If you use the [. . .] in a subroutine (@A—@F), and if the subroutine is used by several different programs, then the sequencing will depend on the order that the subroutine is called, because the sequence advances each time it is used, regardless of which program called it. This can interfere with what you are doing, but can also generate some interesting effects.

If something is altered during the playing of the tune (@Ø operations, Fn=m, and T"text"), then special consideration must be made at the beginning of the tune, or when the tune is played again without loading. The background (or character set) will be left in the condition that existed at the end of the tune.

Important note: If you're using the "record" feature, you can use subroutines @E and/or @F. @A, @B, @C, and/or @D will cause the Music Video Kit program to crash if you are using the record function at the same time. The D command updates "double" sprite shapes (used in actor animation only).

Using @Ø to animate backgrounds is incompatible with "T" Text in record mode and "L" Lyrics.

BACKGROUNDS

Backgrounds are called up by using @BKn, where n is 1,2,3, or 4.

If you follow the @BKn (comma) number (comma) number (for example: @BK1,6,5) the first number sets the background color; the second sets the border color. If you insert the letter C immediately to the right of the K (for example: @BKC1 or @BKC2,7,12) it will first clear the background.

BY THE NUMBERS

Music Video Kit has a complete video language built into it, so you can create videos without using the "Record" mode at all. You can use the graphics language to write a program to do it!

a. First, go to the Graphics Editor and create your background and actor(s).

b. Save the background on a work disk.

c. Before you save your actors(s), press T to go into "Text" mode. Type DEL,10000 and press RETURN. This will delete any actor animation text that you might have in memory. Press RETURN to exit Text mode, and save the actor(s) to disk. Be sure that you have all the shapes that you need in your actor file.

When you have your background and actors (shapes) completed, go to the Performer and then to Create Video.

d. Press T (this command does not appear on the menu, but is available to you) to go into Text mode. Load your background, than Append your Actors, then Append your Music. For example, if you had named all three files ZOWIE, you would type the following:

```
LO B.ZOWIE
AP A.ZOWIE
AP M.ZOWIE
```

You may then use the text editor to edit in your Graphics Language program. You can play your video while in Text mode by typing PLAY and pressing RETURN. When your video is completed, press RETURN to exit Text mode, press D, then A to delete all performances, and save your video (if you go to utilities and save it, it will be stored as a music text with no background or shapes).

ZING: AN EXAMPLE

There is a preprogrammed video on the System disk (DISK A) named ZING.

a. From the Performer menu, press P, then L from the Play Videos menu. Be sure to have the System disk (DISK A) in the drive.

b. Press the letter indicated to load ZING and watch. (You can press RETURN to exit at any time.)

c. Press RETURN again to return to Play Video menu. Press C to go to Create Video. Then go to Text mode by pressing the T key in Create Video mode (T isn't in the menu but is available for you to use).

Then type: L1,16Ø and press RETURN.

You will see a lot of strange looking text. This is the Graphics Language program. It may appear to be difficult to understand, but don't despair—it's easier than it looks! This text edits just like a BASIC program, or Music Processor code.

The @BK1 command in line 1Ø turns on the background (number 1), and initializes the graphics system. This line normally comes with the Background file.

```
2Ø @A,L128(X=[Ø,1,2,3,4,5,6,7],FØ
=X+4,F1=X+12,F2=X+2Ø,F3=X+28,P4)

3Ø @B,L128(X=[Ø,1,2,3,4,5,6,7],F1
=X+4,FØ=X+12,F3=X+2Ø,F2=X+28,P4)

4Ø @C,L128(X=[7,6,5,4,3,2,1,Ø],FØ
=X+4,F1=X+12,F2=X+2Ø,F3=X+28,P4)

5Ø @D,L128(X=[7,6,5,4,3,2,1,Ø],F1
=X+4,FØ=X+12,F3=X+2Ø,F2=X+28,P4)
```

The above four lines do all the strange "squiggles" you saw in the background. Look at line 2Ø:

The @A, says that this defines a function (subroutine) that is used elsewhere (functions can be named @A through @F).

The L128(. . .) means to repeat everything within the parenthesis 128 times.

X= means to store a number in the X variable (X,Y, and Z are for temporary storage, and perform no special action).

[Ø,1,2,3,4,5,6,7] is where the number stored in X comes from. It means to store Ø the first time, 1 the second time, etc. After #7, start again at Ø.

FØ= is where the actual action takes place. It means to take the "Form" or shape from one character, and copy it into the shape of another.

In the above example, the first time through, X will be equal to Ø. 4 will than be added to Ø to get 4 (FØ =X+4). This means to copy the shape from character #4 and store it in character #Ø. F1=X+12,F2=X+2Ø,F3=X+28, do similar things for characters 1,2, and 3. This background is composed entirely of characters Ø,1,2, and 3, so when those character shapes are continually being changed, the screen seems to "crawl".

P4 means to pause for 4 counts. Each count lasts for one 128th note interval, so P4 means to pause for one thirty second note interval.

Lines 3Ø, 4Ø, and 5Ø are based on the same concept, but the "crawls" go in different directions.

6Ø @Ø, (@A,@B,@C,@D,R27=R27E$FF)

In this line, the @Ø, means to start a "program" that works with characters.

The (. . .) means to repeat until the end of the music.

@A,@B,@C,@D, means to use the functions defined in lines 2Ø,3Ø,4Ø, and 5Ø, starting with @A, and ending with @D. This causes 4 phases of different kinds of "crawl".

R27=R27E$FF is directly manipulating one of the VIC chip control registers. In this case, it is the register that controls whether the shapes (sprites) will appear to be on top of the background characters, or underneath the background characters. The E is "exclusive-or", and E$FF means that any bit that was a Ø is now a 1, and any bit that was a 1 is now a Ø. This causes the shapes to alternately flip over and under the background. For more information on VIC Chip Registers, see the listing starting on page 73.

```
7Ø @9,(X=[Ø,1,2,3,4,5,6,7,8,9,1Ø,1Ø,1Ø,1Ø,1Ø
,9,8,7,6,5,4, 3,2,1],P6)
```

The @9, starts another program. Note that in the Graphics Language, you may run up to 10 programs simultaneously, each one running independently from the other.

@9, is the "extra" program—it doesn't perform any graphics functions itself, but allows for extra processing. In this case, it sets the numbers for the shapes—it causes the diamonds to grow larger and smaller.

P6 sets the rate at which this occurs.

The (. . .) again, means to repeat until the end of the music.

```
8Ø @F,H=155,V=12Ø,C=#,P#
```

This sets up another function (named @F). This is the initial setup for the diamond shapes

H=155 sets the initial horizontal position.

V=12Ø sets the initial vertical position.

C=# sets the colors. The # gives the number of the shape, so that sprite #1 gets color #1, sprite #2 gets color #2, and so on.

gives the number of the "program" (@Ø – @9) that uses it. Even though this is in @F, @F is used by @1–@8, and that is where the numbers come from.

P# pauses for a different amount for each sprite. This causes the "sprite programs" to be staggered slightly in time. The reason to do this is that if they all perform at once, then that time interval may get overloaded with work, and the music timing may get off. If the "programs" do their work at different "time slots", then the computer doesn't get overworked and you can have a lot more graphics activity. ("Overworked" doesn't mean that it will hurt the computer, or that the program will "crash", just that the tune will sound strange).

```
90 @1,@F,(S=X9,H=H+5,V=V+4,PS)
100 @2,@F,(S= X9,H=H-3,V=V+4,PS)
110 @3,@F,(S=X9,H=H+5,V=V-4,PS)
120 @4,@F,(S=X9,H=H-3,V=V-4,PS)
130 @5,@F,(S=X9,V=V+8,H=H+1,PS)
140 @6,@F,(S=X9,V=V-8,H=H+1,PS)
150 @7,@F,(S=X9,H=H+9,PS)
160 @8,@F,(S=X9,H=H-7,PS)
```

Each of these lines controls an individual sprite 1–8 (Commodore literature numbers them 0–7, but it is the same thing).

@F does the initialization.

(. . .) means to repeat until the end of the video.

S=X9 sets the shape for that sprite. The =X9 gets the number generated in program @9 (line 70). You can get a value from another program by following the variable with the number of that program.

H=H+5 causes the sprite to move to the right 5 units.

V=V+4 causes the same sprite to move up 4 units.

PS pauses for one sixteenth note interval.

Lines 100 through 160 perform similar processes for sprites 2–8, but the sprites move in different directions.

This completes the animation for this video. You now have 10 separate programs running independently, along with the music, and some of them interacting with each other.

MAKING CHANGES

Type the following two lines (ZING should already be loaded into memory):

```
11 @Ø,C=1,V=Ø,L25(H=Ø,L4Ø(S=[Ø,2,Ø
,2,1,3,1,3],H= H+1),V=V+1)

12 @Ø/
```

These will create a new background.

Press P and RETURN to play your video. If you don't want to wait for it to finish, press RETURN while it is playing. Use the L (List) command to see your program again.

Line 11 starts with @Ø. This means you're working with characters and that the variables (V,H,C,S, etc.) have different meanings than they do when working with sprites.

This program has a loop for 40 times within a loop for 25 times. With the V=Ø,H=Ø,H=H+1, and V= V+1, it sweeps through the entire background (40x25) one position at a time. The C=1 sets the color to white for any character "drawn" into the background.

The S=[Ø,2,Ø,2,1,3,1,3] stores a repeating sequence of characters into the background.

Line 12 @Ø/ just causes the main system to wait until line 11 is done.

You might try putting sequences of numbers Ø,1,2, or 3 in the square brackets. Also, try typing line 11 as follows:

```
11 @Ø,V=Ø,L25(H=Ø,L4Ø(C=V+H,S=[Ø2,Ø
,2,1,3,1,3],H=H+1),V=V+1)
```

The main difference here is C=V+H. This causes the color to change each time, producing diagonal stripes. You can make up your own "formulas" for changing the color:

C=[6,6,6,6,5,5,5,5]

C=?7+1

C=C+1

C=V

C=C+V

C=V//+3

You can also experiment with formulas for S:

S=H+V/A3

S=HA3

S=VA3

S=?3

S=[1,3]

For this background, S should always be Ø,1,2, or 3.

The A3 is a "mask" (logical AND). Useful "mask" numbers are: 1,3,7,15,31,63, and 127.

Once you have the background you desire, you can delete lines 11 and 12. This is because @Ø commands make "permanent" changes in the background.

CHANGING THE SPRITES

You can also make changes in the sprite actions:

In lines 9Ø–16Ø (@1–@8) add C=?7, in front of all the S=X9, s to make C=?7, S=X9

In those same lines, change the numbers in the H=H+5 or V=V−4. Have some consistency in mind, or you will just have shapes randomly flying around.

Here's an idea—delete line 7Ø and replace line 8Ø with the following:

```
8Ø @F,H=155,V=12Ø,C=#,P#,(C=C+1,S=S+1A7,
H=H+?8−4,V=V+?8−4,PE)
```

Note that @1–@8 start out by using @F. In this case, they will never get back from @F because of the (. . .) in @F. This makes the rest of each line (@1–@8) useless.

EXPERIMENT AND DEVELOP YOUR OWN FORMULAS

VIC CHIP REGISTERS

Reg Loc. Description

RØ DØØØ @1 HORIZONTAL
R1 DØØ1 @1 VERTICAL
R2 DØØ2 @2 HORIZONTAL
R3 DØØ3 @2 VERTICAL
R4 DØØ4 @3 HORIZONTAL
R5 DØØ5 @3 VERTICAL
R6 DØØ6 @4 HORIZONTAL
R7 DØØ7 @4 VERTICAL
R8 DØØ8 @5 HORIZONTAL
R9 DØØ9 @5 VERTICAL
R1Ø DØØA @6 HORIZONTAL
R11 DØØB @6 VERTICAL
R12 DØØC @7 HORIZONTAL
R13 DØØD @7 VERTICAL
R14 DØØE @8 HORIZONTAL
R15 DØØF @8 VERTICAL
R16 DØ1Ø @1-@8 HORIZONTAL BIT 8'S
R17 DØ11 CONTROL
R18 DØ12 RASTER
R19 DØ13 LIGHT-PEN HORIZONTAL
R2Ø DØ14 LIGHT-PEN VERTICAL
R21 DØ15 SPRITE ENABLE *
R22 DØ16 CONTROL
R23 DØ17 SPRITE VERTICAL EXPAND *
R24 DØ18 MEMORY CONTROL (BASE)
R25 DØ19 INTERRUPT FLAGS
R26 D01A INTERRUPT MASK
R27 D01B SPRITE OVER/UNDER BACKGROUND *
R28 D01C SPRITE MULTICOLOR MODE
R29 D01D SPRITE HORIZONTAL EXPAND *
R3Ø D01E SPRITE COLLISION DETECT
R31 D01F BACKGROUND COLLISION DETECT
R32 DØ2Ø BORDER COLOR *
R33 DØ21 BACKGROUND COLOR (1) *
R34 DØ22 BACKGROUND COLOR (2) *
R35 DØ23 BACKGROUND COLOR (3) *
R36 DØ24 BACKGROUND COLOR (4-EXTENDED MODE) *

R37 DØ25 SPRITE COMMON COLOR (1) *
R38 DØ26 SPRITE COMMON COLOR (3) *
R39 DØ27 @1 COLOR (2)
R4Ø DØ28 @2 COLOR (2)
R41 DØ29 @3 COLOR (2)
R42 DØ2A @4 COLOR (2)
R43 DØ2B @5 COLOR (2)
R44 DØ2C @6 COLOR (2)
R45 DØ2D @7 COLOR (2)
R55 DØ2E @8 COLOR (2)

*Especially Useful

NOTES

CONNECTING TO YOUR STEREO

Using the audio on your Commodore 64, you can play Music Video Kit through many types of electronic sound equipment. These include:

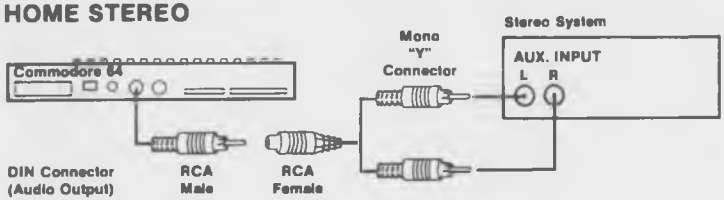
— home stereo systems

— portable, personal stereo units

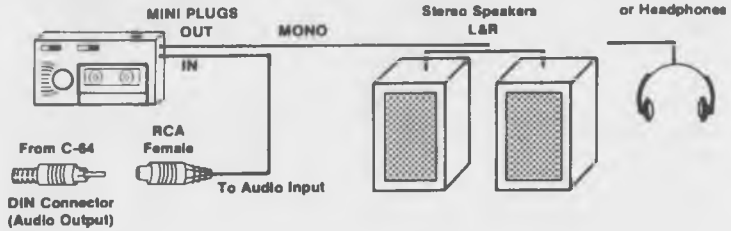
— effects units and a musical instrument amplifier

— or simply, a set of headphones.

HOME STEREO

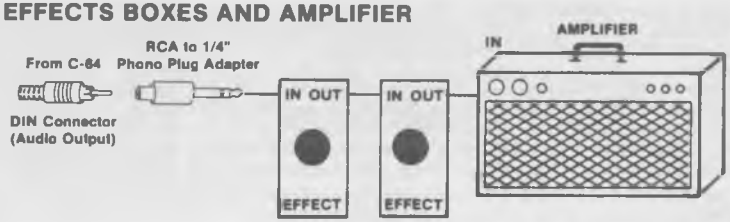


PERSONAL STEREO

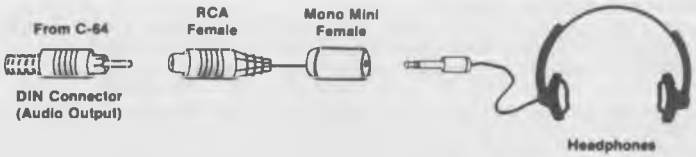


Note: Using this arrangement, you can play along with the radio or tape.

EFFECTS BOXES AND AMPLIFIER



HEADPHONES



Important Note: Since the audio output level of the Commodore 64 is fairly high, use caution when connecting it to sensitive sound equipment. The following precautions should prevent any problems:

1) Turn volume controls all the way down before turning on any equipment. Then turn up the volume slowly once the equipment is turned on.

2) If distortion occurs at normal listening levels, turn off the system and consult your audio dealer before any further use.

LIMITED WARRANTY

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SIGHT & SOUND Music Software, Inc.

3200 South 166th Street New Berlin, WI 53151

MUSIC VIDEO KIT GRAPHICS EDITOR MENUS

ACTOR MENU

1—LOAD ACTOR (L) loads an actor off the disk. A list of all the actors available appears; simply press the letter next to the one you wish to load.

2—SAVE ACTOR (S) saves the actor you are currently creating onto a work disk. Pressing the f1 key will list all the actors already on the disk. Type the name of your actor (up to 14 characters) and press "RETURN".

3—DRAW ACTOR (A) draws actor shapes for your videos. See the list of Draw Actor mode commands.

4—CREATE ACTOR ANIMATION (C) creates an action definition for your actor.

5—ANIMATE ACTOR (*) is used to test out the actor's action definition. The joystick is used to direct the actor. The color of the screen is controlled with the B and SHIFT B keys. The color of the actor is controlled with the f1 through f7 keys (the same as Record mode). The actor will appear over the last background edited.

6—DELETE ACTOR (D) erases the whole actor workspace.

7—EDIT ACTOR TEXT (T) edits the action definition text for the actor currently in the workspace. Each direction on the joystick has its own line of "code". If you're into programming, check out the Graphics Language section of the documentation.

BACKGROUND MENU

1—LOAD BACKGROUNDS (L) loads a background file from disk. A list of all the backgrounds on the disk appears; press the letter next to the one you wish to load.

2—SAVE BACKGROUNDS (S) saves the backgrounds you create onto a workdisk. Pressing the f1 key will list all the backgrounds on the disk. Type the filename of your background and press "RETURN".

3—DRAW BACKGROUNDS (B) allows you to draw backgrounds out of characters. See the list of Draw Background mode commands.

4—DELETE ALL BACKGROUNDS (D) erases the whole background workspace.

5—EDIT BACKGROUND TEXT (T) allows you to edit the setup text for the background currently in the workspace. Interesting "animated" backgrounds can be designed using the Graphics Language. If you're into programming, read the description of the Graphics Language.

UTILITIES MENU

1—FULL DIRECTORY (D) gives a full disk directory. Actor files are prefixed by an A.; background files by a B.; and music files by an M.

2—DISK COMMAND (C) sends commands directly to the disk drive. This is useful for formatting new work disks, scratching files, or validating disks. See your 1541 disk drive manual for details.

3—LOAD KOALA FILE (K) loads a picture drawn with a Koala Pad and lets you use it as a background. You must save it with the Save Background command before it can be used.

DRAW ACTOR MODE

Cursor keys or joystick moves red cursor. * or joystick button turns pixel on or off in normal mode. Places a pixel of selected color in multicolor mode.

•	**SET PIXEL**	turn on pixel.	single color mode only
SP	**CLR PIXEL**	turn off pixel. SP = Space Bar.	single color mode only
*	**CHANGE PIX**	In single-color mode, changes and "on" pixel to off; and "off" pixel to "on." In Multicolor mode, it changes the pixel to the color indicated at the top of the drawing area.	
=	**MERGE**	logically OR current shape with other shape selected.	
S	**SELECT**	select shape to work on.	
N	**NEGATIVE**	produce a "negative" image of current shape. Logically NOT current shape.	
@	**ROTATE**	rotate current shape by 90 degrees.	
T	**TRANSFER**	transfer (copy) shapes.	
H	**FLIP HORIZ.**	horizontal flip. Produces a mirror image of current shape.	
V	**FLIP VERT.**	vertical flip. Produces an inverted image of current shape.	
EH	**HORZ. EXP.**	expands or contracts the shape size horizontally.	
EV	**VERT. EXP.**	expands or contracts the shape size vertically.	
M	**MULTICOLOR**	toggles multicolor mode on and off.	

P	**PRINT**	prints a range of shapes on your printer.
:	**DBL OFF**	produces a "double" shape made up of two shapes. Press repeatedly to cycle through the different configurations (double off, double over, double horizontal, double vertical). **The double shape is made up of the current shape and the next shape.**
+,−	**NEXT,PREV**	+ = access next shape; − = access previous shape
C,B	**COLOR**	C = change color of shape; B = change color of second half of double shape. (Using just the letter advances from color 1 to 16. SHIFT key and letter decreases through the colors.) NOTE: In MULTICOLOR mode, this line changes to:
0-3,C,B	**COLOR**	select color in multicolor mode. C, Shift-C changes the selected color. Color 2 is the Private color.
CLR	**CLEAR**	erases current shape
L,R,U,D	**SHIFT**	shifts shape one pixel to the Left, Right, Up or Down respectively.

(The following do not appear on the screen but are available to you.)

f1, f2	change color of text on screen–colors advance. SHIFT f1 decreases through the colors.
f3, f4	change color of background–colors advance. SHIFT f1 decreases through the colors.

DRAW CHARACTER MODE

Cursor keys or joystick moves red cursor. * or joystick button turns pixel on or off in normal mode. Places a pixel of selected color in multicolor mode.

•	**SET PIXEL**	turn on pixel.	single color mode only
SP	**CLR PIXEL**	turn off pixel.	
*	**CHANGE PIX**	turn pixel on or off in normal mode. Places a pixel of selected color in multicolor mode.	
=	**MERGE**	logically OR current character with other character selected.	
/	**BACKGROUND**	toggles between character editor and background.	
S	**SELECT**	select character to work on.	
N	**NEGATIVE**	produce a "negative" image of current character. Logically NOT current character.	
@	**ROTATE**	rotate current character by 90 degrees.	
T	**TRANSFER**	transfer (copy) characters.	
H	**FLIP HORIZ.**	horizontal flip. Produces a mirror image of current character.	
V	**FLIP VERT.**	vertical flip. Produces an inverted image of current character.	
P	**PRINT**	prints a range of characters on your printer.	

RET	**EXIT**	return to Background menu.
+,−	**NEXT, PREV**	+ =access next character; − =access previous character.
CLR	**CLEAR**	erases current character
L,R,U,D	**SHIFT**	shifts character one pixel to the Left, Right, Up or Down respectively.

(The following do not appear on the screen but are available to you.)

M		toggles multicolor mode on and off. When on, the following appears as the second last line:
1-4	**SET COLOR**	selects color in multicolor mode. Color 4 is the Private color.
f1, f2		change color of text on screen–colors advance. SHIFT f1 decreases through the colors.
f3, f4		change color of background—colors advance. SHIFT f3 decreases through the colors.

DRAW BACKGROUND MODE

Cursor keys or joystick moves flashing cursor, or joystick firebutton places a character.

+,−	**NEXT,PREV. CHARACTER**	select next/previous character.
=	**MERGE**	merge current background with other selected background.
/	**DRAW CHARACTERS**	toggles between character editor and background editor.
S	**SELECT CHARACTER**	select character.
CLR	**CLEAR SCREEN**	erase current background.
•	**SET**	place character on background.
SP	**CLEAR**	erase character.
P	**PAINT**	paint an area in currently selected color.
H	**HELP MENU**	display help menu (press any key to exit menu).
@	**SET**	place prop (4 x 4 group of characters).
C, ↑C		NOTE: In this menu, ↑ = SHIFT. change character color.
B, ↑B		change selected background color.
U,D,L,R		shift background Up, Down, Left, or Right.

Ø	select border as background to be changed by "B" key.
1, 2, 3, 4	select other pixel patterns to be changed in multicolor and extended modes.
N	select normal color mode.
M	select multicolor mode.
E	select extended color mode.
G	select background to edit, 1–4. The highest number of backgrounds selected using this command, sets the number of backgrounds saved with the Save command.
#	set number of backgrounds to be saved. Used to over-ride the G command. You can also select Ø backgrounds.

RECORD MODE FREEZE COMMANDS

Use these commands in 'freeze' mode

Press:

CRSR keys to position actor

1–* to select a new actor (* = a number from 1 to 7 depending on the number of actors you selected)

f1–f8 to change colors

T (Text) RETURN to enter text

U to put actor Under the background

O to put actor Over the background

Space to step through the video

S to go in and out of 'slow' mode

RETURN to finish

INDEX

* Asterisk 32, 82, 84
@ ROTATE 82, 84
@ SET a Prop 86
A. (Actor File Designation) 65, 81
Actor Definition 32
Actor Drawing Box 25
Actor Shape Editor 25
Actors Menu 79
Add to Performance Options 14
Add to Performances 14, 15
Advanced Background Color Modes 49
  Extended Mode 49
  Multicolor Mode 49
Advanced Documentation 51
Altering Computer Song Album/Music Processor Songs 20, 21
Animate Actor 33, 79
Animation 27, 28
Append (AP) 65
ARE YOU SURE? Prompt 31
Asterisk (*) 32, 82, 84
B Color 38, 49, 83, 86
B. (Background File Designation) 65, 81
Background Color 49
Background Menu 80
Background Mode 43, 86
Background Pixels in Extended Mode 49
Border Color Changes During Recording 13
By the Numbers 79
: (Colon) 83
C Color 36, 49, 83, 86
C,B COLOR 36, 38, 83
C1-4 Color 49, 85
CLR Clear 26, 83, 85, 86
CTRL Key 18
Cartoon Animation 27
Cartwheel Actor 27
Changes in Border Color During Record a Performance 13
Changing the Sprites 72
Character Mode 84
Character Pixels in Extended Mode 49
Characters in Extended Mode 49
Characters Ø through 63 in Extended Mode 49
Clear (CLR) 26, 83, 85
Clear Actor Memory 27
Color (B) 38, 49, 83, 86
Color (C) 36, 49, 83, 86
Color (C)1-4 49, 85
Color (SHIFT C,B) 44, 49, 83, 86
Color (SHIFT 1-4) 13
Color of Background 83, 85
Color of Text 83, 85
Commands Used in Freeze Mode 13, 88
Common Colors 39, 49
Compatible Programs 6
Computer Song Albums 6, 20, 21
Connecting to Your Stereo 76
Controlling the Cursor from the Keyboard/Joystick 25
Create Actor Animation 31, 79
Create New Video 11
Create Videos 10
Creating a Multicolor Actor 36
Creating a Performance 12
Creating a Sample Video 11
Creating a Simple Video 4
Creating an Actor 27
Cursor Keys (CRSR) 5, 12, 25
D Command 64
D Down 83, 85, 86
DEL1 Command 65
DESTINATION START #? 28
DIR Command 20, 21

Data Disk (DISK B) 3
Define Actor Action 32
DELAY time 31
Delete Actor 33, 79
Delete All Backgrounds 43, 80
Delete from songs 20
  Lyrics
  Measure Marks
  Optional Special Effects
Delete Performances 16
Disk Command 18, 50, 81
Disk Directories 18
Double (:) 42, 83
  DBL OFF 40, 83
  DBL OVER 41, 83
  DBL HORIZ 41, 83
  DBL VERT 41, 83
Double Actor Shapes 40
DRAW 23, 79, 80
Draw a Background 44, 80
Draw a Character 43, 86
Draw Actor 25, 79
Draw Actor Mode 26, 27, 79, 82
Draw Background Mode 43, 86
Draw Backgrounds 43, 80
Draw Character Mode 43, 84
Drawing a Simple Actor 27
Duplicating a Filename 19
E (select Extended color mode) 49
EH HORZ EXP 35, 82
EV VERT EXP 35, 82
Edit Actor 24
Edit Actor Text 34, 79
Edit Background Text 80
Edit Backgrounds 43, 80
Edit Video & Music Text 18
Erase Actor Drawing Box 26
Example Background 47
Expand/Contract Shapes (EH) (EV) 35, 82
Extended Advanced Background Mode 49
Extended Mode 49
f1 5, 12, 24, 83, 85, 88
f2 5, 12, 83, 85, 88
f3 12, 83, 85, 88
f4 12, 83, 85, 88
f5 5, 12, 88
f6 5, 12, 88
f7 5, 12, 88
f8 5, 12, 88
Filename 19, 24
Firebutton 5, 12, 14
FLIP HORIZ (H) 28, 82, 84
FLIP VERT (V) 29, 82, 84
Formatting a Work Disk 10
Free Memory (with a) Number 22
Freeze Animation 13, 32, 88
Freeze Mode 5, 12, 13, 14, 32, 88
Freeze Mode Record Commands 13, 88
Full Directory 18, 50, 81
G (select background to edit 1–4) 87
Graphics Editor 8, 22, 23, 79
Graphics Editor Menus 79, 80, 81
Graphics Editor Modes 82, 84, 86
Graphics Language 51
  @ 51
  Variables 52
    H 52
    V 52
    C 53
    S 53
    X,Y,Z 53
    Rn 53
    Mn 54
    ?n 54
    # 54
    [. . .] 55
  More About Variables 55
  Arithmetic 56
    + Addition 56
    − Subtraction 56
    A (And) 56
    O (Or) 57
    E (Exclusive Or) 57

* (Multiply by 2—arithmetic left shift) 57
/ (Divide by 2—arithmetic right shift) 57
Functions 58
, (comma) 58
; (semicolon) 58
Px 58
Pn 58
P! 59
! 59
PVn 59
(. . .) 59
Ln(. . .) 59
Wn=m(. . .) 60
In=m(. . .) 60
Fn=m 60
T"text" 61
@A-@F 61
J (with = sign) 62
J (without = sign) 62
K 62
G 62
Special Considerations 63
Backgrounds 64
By the Numbers 65
Zing: An Example 66
Making Changes 70
Changing the Sprites 72
VIC Chip Registers 73
H FLIP HORIZ 82, 84
H Help 43, 86
Here's Something You Can Try 35
Horizontal Expansion (EH) 35, 82
Interrupting a Record Performance 14
(Also see: Resuming. . .)
Introduction to Music Video Kit 8
J MVK.Songname Command 21
Joystick 5
Commands 31
Editing 25
Plugging In 2
Koala Files 50, 81
L Command 18
L Left 32, 83, 85
L Lyric 64
Linking Double Actor Shapes 42
LOAD 3, 23
Load (LO) 23,
Load Actor 11, 24, 79
Load & Play Video 9
Load Backgrounds 11, 80
Load Koala File 50, 81
Load Music 11, 19
Load Video 9, 16
Loading Music Video Kit 3
Lockup 64
Lyric (L) 64
M. (Music File Designation) 21, 65, 81
M key 31, 36, 49
M MULTICOLOR 49, 82, 87
MVK. file 21
Making a Simple Background 43
Making Changes in Graphics Language 70
Making Your Actor Move 32
Memory Overflow 22
Menus 1
Actors Menu 79
Background Menu 80
Graphics Editor Menu 22, 23
Main Menu 3, 4, 7
Utilities Menu 81
Merge (=) 82, 84, 86
Minus Key (−) 28, 32, 83, 85, 86
Minus/Plus (−/+) 28, 32, 83, 85, 86
Mixing Normal and Multicolor Characters 49
Modes
Draw Actor Mode 82
Draw Background Mode 86
Draw Character Mode 84
Multicolor (M) 49, 82, 87
Multicolor Advanced Background Mode 49

Multicolor Characters 49, 85
Multicolor Mode in the Actor Editor 36, 82
Multiple Backgrounds 13
Music Commands 19, (also see: Functions 58)
Music Processor 6, 19, 20
Music Processor Songs 20
(set number of backgrounds to be saved) 87
N (select normal color mode) 49, 87
N NEGATIVE 82, 84
Negative (N) 82, 84
Next,Prev (+,−) 28, 32, 83, 85, 86
A "No-no" 10
Normal Characters 49
1–4, SET COLOR 85
O (put actor Over the background) 13, 87
"Off" Pixels in Background 49
"On" Pixels in Background 49
Options During Recording Performances 14
P Paint 47, 86
P PRINT 82, 84
Paint (P) 47, 86
Performance Note 6
Performances 5
  Adding To 14
  Playing Back 5
  Recording 5
The Performer 8, 50
Performer Mode 9
Period (.) (place character on background) 86
Period (.) SET PIXEL 82, 84
Pixels 25
PLAY (P) 65
Play All Videos 9
Play it Again 9
Play Videos 9, 16
Playing Preprogrammed Videos Provided 4, 9
Plus, Minus (+,−) Keys 28, 32, 83, 85, 86
Plus Key (+) 28, 32, 83, 85, 86
Print (P) 82, 84
Private Colors 39, 49
Program crash 64
Props 48
R Right 32, 83, 85, 86
Record Feature 64
Record Memory Size 13
Record Mode Freeze Commands 13, 88
Record Performances 5, 12, 14
Red Cursor 25
REPEAT (R) 31
RETURN Key 3, 7, 9, 10, 14
Resuming an Interrupted Record Performance 14, 15
Rotate (@) 82, 84
RUN/STOP 18
/ (Slash) 43, 84, 86
S SELECT 43, 82, 84, 86
S Slow Mode 13, 88
SAVE 23
Save Actor 24, 33, 83
Save Backgrounds 47, 80
Save Koala File 50, 81
Save Music 19, 21
Save Shortened Songs 21
Save Video 16
Select (S) 43, 82, 84, 86
SELECT DELAY 31
SELECT DISTANCE 31
SET @ a Prop 86
SET PIXEL (. Period) turn pixel on 82, 84
Shapes 25
SHIFT 1–4 13
SHIFT CLR/HOME 26
Shorten Computer Song Album/Music Processor Songs 20, 21
Some Things to Know About Performances 12

Something to Try 26
SP CLEAR Character 86
SP CLR PIXEL (SP=Space Bar) turn pixel off 82, 84
SOURCE END#? 28
SOURCE START #? 28
Space Bar 9, 19
Sprites 25
Stepping Through a Video 13, 88
Subroutines @A, @B, @C,and/or @D with "record" feature 64
Subroutines @E and/or @F with "record" feature 64
System Disk (DISK A) 3
T (Text) 61, 64, 65
T TRANSFER 25, 82, 84
Text (T) 61, 64, 65
Things to Do with Actors 34
TOO FULL 22
Transfer (T) 25, 82, 84
Try Out Your Actor 32
Trying Music Video Kit Right Away! 4
Turn Pixel on/off 25
U (putting actor Under the background) 13, 88
U Up 83, 85, 86
Useful "Mask" Numbers 71
Using Computer Song Albums or Music Processor Songs 20
Using the Features of the Create Video Mode 11
Using the Menus 8
Utilities 18, 50, 81
Utilities Menu 81
V FLIP VERT 29, 82, 84
Vertical Expansion (EV) 35, 82
VIC Chip Registers 68, 88
Video Commands 19
View Your Drawings 31
Viewing Your Actor and Background 49
WIPE Command 20
Shortcut WIPE method 21
WIPE /
WIPE L
WIPE P
Ø (Zero) Key 47, 87
Ø–3,C,B COLOR 83
Zing: An Example 66

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